

REMARKS

I. Responses to Examiner's Remarks

The Applicants appreciate the Examiner's careful attention to this application. Reconsideration of the application is respectfully requested.

Claims 49-66 are currently pending. Claims 56-68 are new. Claims 49-55 were rejected. Applicants are pleased to note that Claims 53-55 are deemed by the Examiner to be neither anticipated nor obvious in light of the prior art.

II. Discussion of Amendments (Support Identified)

Applicants have made amendments to the claims. Applicants submit that no new matter has been added to the claims. Applicants have made these amendments for the sole purpose of facilitating the expeditious allowance of any subject matter identified as allowable by the Examiner. Applicants make no admission herein that any cancelled or amended claims in their original form is non-patentable, nor do Applicants disclaim the subject matter of any cancelled or amended claims or dedicate them to the public. If any such disclaimers are believed to have been made, Applicants explicitly rescind them for the purpose of future applications to permit recapture of the original subject matter of any cancelled or amended claims. Applicants reserve the right to file future applications for letters patent directed to the original subject matter of any cancelled or amended claims. Support for the amendments may be found in the specification as originally filed as discussed below.

Claim 49 has been amended to delete the word “degenerate” and insert the phrase “having at least one of bacteriolytic activity and glycosidase activity.” Bacteriolytic activity is supported at least on page 18 line 13 of the specification. Glycosidase activity is supported at least on page 15 line 18 through page 16 line 4.

Claim 50 has been amended to replace “at least 5 consecutive amino acids” with “at least 6 consecutive amino acids.” Fragments of greater than 5 amino acids are taught at least on page 8 in the last paragraph. One of ordinary skill in the art would understand that fragments of greater than 5 amino acids encompass fragments of greater than 6 amino acids.

Claim 54 is amended to recite “where said variant is a mutant, said mutant being characterized as having has at least one of the following characteristics.” Applicant submits this amendment merely clarifies the claim and requires no specific support.

Claims 56-68 are new.

Claim 56 depends on Claim 49, and adds the limitation of the variant being at least 93% identical to SEQ ID NO: 2. Page 4 line 34 through page 5 line 2 disclosure that the scope of the present invention includes “amino acid sequences which are at least 50% identical, 80% identical, 90% identical, or greater to the amino acid sequence set forth in SEQ ID NO: 2.” One of ordinary skill in the art would understand that sequences of greater than 90% identity encompass sequences of at least 93%.

Claim 57 depends on Claim 56, and adds the limitation of the variant being at least 95% identical to SEQ ID NO: 2. This element is supported at least by original Claim 20.

Claim 58 is directed to "A purified polypeptide the amino acid sequence of which comprises SEQ ID NO: 2, or a variant of SEQ ID NO: 2 that is at least 93% identical to SEQ ID NO: 2." Page 4 line 34 through page 5 line 2 disclosure that the scope of the present invention includes "amino acid sequences which are at least 50% identical, 80% identical, 90% identical, or greater to the amino acid sequence set forth in SEQ ID NO: 2." One of ordinary skill in the art would understand that sequences of greater than 90% identity encompass sequences of at least 93%.

Claim 59 depends on Claim 58, and adds the limitation of the variant being at least 95% identical to SEQ ID NO: 2. This element is supported at least by original Claim 20.

Claim 60 depends on Claim 58, but is otherwise identical to Claim 50.

Claim 61 depends on Claim 58, but is otherwise identical to original Claim 21.

Claim 62 depends on Claim 58, but is includes the claim element of a serine at one or more of position 26 and position 44, as discussed on page 10 lines 3-6.

Claim 63 depends on Claim 62 but includes the element of lack of endopeptidase activity. Lack of endopeptidase in these embodiments is discussed on page 17, lines 1-5.

Claim 64 recites "A purified polypeptide the amino acid sequence of which comprises SEQ ID NO: 2, or a fragment of SEQ ID NO: 2." Fragments of SEQ ID NO: 2 are discussed on page 8, last paragraph.

Claim 65 depends on Claim 64, an includes the element of being immunologically reactive to an anti-GBS phage lysin antibody, as supported by original claim 16.

Claim 66 depends on Claim 64 but is otherwise identical to original Claim 21.

Claim 65 depends on Claim 62 but includes the claim element of a serine at one or more of position 26 and position 44, as discussed on page 10 lines 3-6.

Claim 66 depends on Claim 65 but includes the element of lack of endopeptidase activity. Lack of endopeptidase in these embodiments is discussed on page 17, lines 1-5.

III. Objections to the Specification

The Examiner objects to the specification on multiple grounds. The Office Action states that specification fails to comply with the requirements of 37 C.F.R. §§ 1.821-1.825 because it contains amino acid sequences that are not identified in the drawings. Applicants have submitted replacement drawings and inserted the required SEQ ID NO designations. As Applicants have addressed the basis of the objection, Applicants respectfully request the objection be withdrawn.

The Examiner objects to the specification because it contains an embedded hyperlink and/or other form of browser-executable code on page 8. Applicants have submitted a replacement page 8 in which the objected hyperlink has been deleted. As Applicants have addressed the basis of the objection, Applicants respectfully request the objection be withdrawn.

IV. Claim Rejections Under 35 U.S.C. § 112, Paragraph 1

Claims 49-51 were rejected on pages 3-5 of the Office Action as failing to meet the written description requirement. The Office Action takes the position that all claims drawn to "a degenerate variant" are inadequately described, as one skilled in the art

cannot understand which variants are degenerate variants unless a particular function is claimed. The Office Action states on page 4:

As there is no function required for the protein, it appears that any substitution could therefore be considered a conservative substitution and it does not appear that there is any limit on the number of substitutions that can be made to SEQ ID NO:2. Thus, there is no correlation between the structure of the variants and their function. Therefore, the specification provides insufficient written description to support the genus encompassed by the claim.

Applicants have amended the claims herein to delete the rejected term “degenerate variant.” Accordingly Applicants respectfully request the Examiner withdraw the rejection and allow the claims.

V. Claim Rejections Under 35 U.S.C. § 112, Paragraph 2

Claims 49-50 and 53 were rejected as indefinite on pages 5-6 of the Office Action. The Office Action states that the phrase “degenerate variant of SEQ ID NO:2” is vague such that Claims 49, 50 and 53 are indefinite. Applicants have amended the claims herein to delete the rejected term “degenerate variant.” Accordingly Applicants respectfully request the Examiner withdraw the rejection and allow the claims.

VI. Claim Rejections Under 35 U.S.C. § 102

Claims 49-51 were rejected as anticipated by international patent application publication W002/34771 to Telford et al. on pages 6-7. The Office Action explains:

Claims 49-52 are rejected under 35 U.S.C. 102(a) as being anticipated by Telford et al. (W002/34771, May, 2002; IDS filed 2/6/2004). The instant claims are drawn to purified polypeptides with the amino acid sequence of SEQ ID NO:2 or degenerate variants of SEQ ID NO:2. Telford et al. disclose a purified protein (as well as fragments of said protein which are at least 7 amino acids long) with the sequence of SEQ ID NO: 1388 (see

page 2, lines 1-5 and 25- 30, and page 140 of the sequence listing). SEQ ID NO:1388 is 92.7% identical to the instantly claimed SEQ ID NO:2. As there is no defined function for the protein, any substitution can be considered a conservative substitution, as it would not alter the function of the protein. Therefore, the protein disclosed by Telford et al. is considered a degenerate variant.

Claims 49-51 as amended are now drawn to a polypeptide comprising SEQ ID NO:2 or a variant of SEQ ID NO: 2 having at least one of bacteriolytic activity and glycosidase activity. Applicant submits the Telford discloses neither bacteriolytic activity nor glycosidase activity. As Telford does not disclose every element of the claims, Telford does not anticipate the claims. Accordingly, Applicants respectfully request the Examiner withdraw the rejection and allow the claims.

Applicants submit that Telford does not anticipate any of new Claims 56-66. Claim 56 depends on Claim 49. As Claim 49 is not anticipated, neither is Claim 56.

Claims 57-61 include the element of at least 93% identity with SEQ ID NO: 2. Telford teaches a sequence with 92.7% identity with SEQ ID NO: 2, which is less than 93%. As Telford does not disclose every element of Claims 57-61, Telford does not anticipate Claims 57-61.

Claims 62-66 are drawn to a polypeptide comprising SEQ ID NO: 2 or a fragment thereof. As Telford does not disclose a fragment of SEQ ID NO: 2, Telford does not teach every element of the claims, and so does not anticipate Claims 62-66.

CONCLUSION

The Applicants respectfully request the Commissioner of Patents consider the enclosed remarks and enter the following submission into the record, in response to the Examiner's Office Action dated 02/03/2009. Reconsideration in light of this submission is respectfully requested. If the Examiner requires additional action that may benefit from a telephone call, Applicants invite a call to its attorney of record, Nicholas J. Landau (Reg. No. 57,120). E-mail correspondence and transactions to nlandau@babco.com are authorized and encouraged.

Applicants have diligently sought to comply with all requirements and to correct all informalities and rejections. The Application is believed to be in condition for allowance, and a timely Notice of Allowance is respectfully requested.

Respectfully submitted,
BRADLEY ARANT BOULT CUMMINGS LLP

4/21/2009
Date

Nicholas J. Landau
Nicholas J. Landau
Reg. No. 57,120